

PowerConnect 6224F Switch



High performance fibre gigabit ethernet

The PowerConnect™ 6224F combines advanced core switching capabilities with all Fiber Gigabit Ethernet for the small to medium enterprise network. The PowerConnect 6224F has the following advantages:

- Resilient, high-performance stacking
- Ideal switch for Voice over IP (VoIP)
- High Availability Stacking for up to twelve systems
- Supports 10GBase T and SFP+ 10GE Modules

Advanced features with superb performance

The PowerConnect 6224F delivers a comprehensive feature set with superb performance and all Fiber connectivity for the small to medium enterprise network backbone or for long-haul connectivity. This 24-port Gigabit Ethernet Layer 3 switch is stackable and offers optional 10 Gigabit Ethernet uplinks and supports the latest version of the Internet Protocol—IPv6—enabling broader worldwide scalability. The PowerConnect 6224F offers Enterprise class availability with failover times that provide for sub-250ms failover of any stacked switch, including master failure under all configurations. Furthermore, high performance stacking is supported for up to twelve systems, and advanced security and Quality of Service (QoS) features make this switch ideal for applications such as Voice over IP, Layer 3 routing, High Performance Cluster Computing (HPCC), and iSCSI storage. Advanced monitoring functions include sflow support, SNMP capabilities and a full GUI interface with graphical reporting. In the event of a switch failure, high availability functions maintain traffic flow in the stack, including mission-critical voice and storage sessions.



Lifetime Limited Warranty

PowerConnect™ switches not only provide the quality, reliability and capability you expect from Dell™, but also the peace of mind that guarantees hardware for life — a true Lifetime Warranty.



High Density

Delivering significant rack density, the PowerConnect 6224F is designed to give users the flexibility to maximize server and workstation connectivity in a 1U form factor. Up to 576 servers and/or clients can be connected in a stack of 12 62xx series switches to provide the maximum density, flexibility, and manageability. Also, the stack is built on a 10/100/1000 BASE-T GbE switch.



High-Performance Stacking

The PowerConnect 6224F switch supports up to four 10 Gigabit fiber (SFP+) & two 10GBase-T copper Ethernet uplinks for connectivity directly to 10GE servers, routers, enterprise backbones and data centers.



Optional 10 Gigabit Ethernet

The PowerConnect 6224F switch supports up to four 10 Gigabit fiber and two 10GBase-T copper Ethernet uplinks for connectivity directly to 10 GE server.

Advanced Layer 3 Capabilities

The PowerConnect 6224F supports advanced Layer 3 routing and multicast protocols to help reduce congestion and manage traffic in the network. Frequently used LAN routing protocols such as Routing Information Protocol (RIP) v1/v2, Open Shortest Path First (OSPF) v2/v3, Virtual Router Redundancy Protocol (VRRP), Internet Group Management Protocol (IGMP), Distant Vector Multicast Routing Protocol (DVMRP), Protocol-Independent Multicast (PIM), and Link Layer Discovery Protocol - Media Endpoint Discovery (LLDP-MED) are also supported.



Advanced Quality of Service

The PowerConnect 6224F offers flexibility in QoS by giving network administrators the ability to prioritize time-critical network traffic based on a variety of user-defined criteria. Administrators can expedite traffic based on Level 2 or Level 3 information, such as IP QoS, and provide greater control over traffic flow within the network. Voice virtual LANs (VLANs) are provided specifically for VoIP applications.



Advanced Security

Up to 1,024 Level 2 — Level 4 Access Control Lists (ACLs) can be supported on the switch, allowing the user to perform deep packet inspection. 802.1x port authentication offers both single and multiple host access, including a captive portal option for guest access. Further security is provided through Denial of Service (DoS) Attack Prevention, whereby the switch can help protect against common network attacks and CPU attacks.



IP Version 6 Certified

IP version 6 (IPv6) has been in development for over 20 years. IPv6 has been designed to address IP address limitations of the previous version of the Internet Protocol — enabling an increased number of unique IP addresses for broader scalability worldwide, now and in the future.

Port Attributes

- Fiber-Capable Gigabit Ethernet Port: Industry Standard Form factor (SFP) for environments with Fiber media. Will accommodate various types of Fiber interface transceivers (e.g. 1000SX, 1000LX; 10/100/1000BASE-T modules sold separately)

20 SFP slots for fiber or copper media support

4 combo ports for copper or SFP media support

10 Gigabit Ethernet uplink modules (optional)
48Gbps Stacking module (optional)
Auto-negotiation for speed, duplex mode and flow control
Auto MDI/MDIX
Port mirroring
Flow-based port mirroring
Broadcast storm control
sFlow
iSCSI Auto Configuration

Performance

- Switch Fabric Capacity up to 136 Gb/s
Forwarding Rate up to 95 Mpps
Up to 16,000 MAC Addresses
256MB of CPU SDRAM
32MB of Flash Memory

Availability

- Spanning Tree (IEEE 802.1D) and Rapid Spanning Tree (IEEE 802.1w) with Fast Link Support
Multiple spanning trees (IEEE 802.1s)
Supports Virtual Redundant Routing Protocol (VRRP)
External redundant power support with PowerConnect RPS-600 (sold separately)
Cable diagnostics
Optical transceiver diagnostics
Link Dependency – Can up/down links based on other port events

Layer 3 Routing Protocols

Static routes
Routing Information Protocol (RIP) v1/v2
Open Shortest Path First (OSPF) v1/v2/v3
Classless Inter-Domain Routing (CIDR)
Internet Control Message Protocol (ICMP)
ICMP Router Discover Protocol (IRDP)
Virtual Redundant Routing Protocol (VRRP)
Address Resolution Protocol (ARP)
Internet Group Management Protocol (IGMP) v2
Distance-Vector Multicast Routing Protocol (DVMRP)
DHCP – Helper/Relay/Snooping

Layer 3 Routing Performance

Up to 224 IPv4 routes, up to 128 IPv6 routes

Up to 128 RIP Routing Interfaces

Up to 128 OSPF Routing Interfaces; up to 128 OSPF Areas; up to 128 Routing Interfaces per OSPF Area; up to 32 routes for ECMP Routing; up to 2 next hops per ECMP

Up to 128 VLAN Routing Interfaces

Up to 256 Multicast Forwarding Entries

Up to 896 ARP entries; Up to 512 NDP entries

Routing

- **Layer 3 Routing Protocols**

Static routes

Routing Information Protocol (RIP) v1/v2

Open Shortest Path First (OSPF) v1/v2/v3

Classless Inter-Domain Routing (CIDR)

Internet Control Message Protocol (ICMP)

ICMP Router Discover Protocol (IRDP)

Virtual Redundant Routing Protocol (VRRP)

Address Resolution Protocol (ARP)

Internet Group Management Protocol (IGMP) v2

Distance-Vector Multicast Routing Protocol (DVMRP)

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Up to 128 VLAN Routing Interfaces

Up to 256 Multicast Forwarding Entries

Up to 896 ARP entries; Up to 512 NDP entries

VLAN

VLAN support for tagging and port-based as per IEEE 802.1Q

Double VLAN tagging (QinQ)

Up to 1024 VLANs supported

Dynamic VLAN with GVRP support

Custom Protocol VLANs

Quality of Service

- Layer 2 Trusted Mode (IEEE 802.1p tagging)
Layer 3 Trusted Mode (DSCP)
Layer 4 Trusted Mode (TCP/UDP)
Advanced Mode using Layer 2/3/4 flow-based Policies, including metering/rate limiting, marking and bandwidth guarantees; up to 100 ACLs can be used for QoS flow identification via Class-maps
8 Priority Queues per Port
Adjustable Weighted-Round-Robin (WRR) and Strict Queue Scheduling
Port-based QoS Services Mode
Flow-based QoS Services Mode

Multicast

- Static IP Multicast
Dynamic Multicast Support – 256 Multicast groups supported in IGMP Snooping
IGMP snooping for IP multicast support
IGMP Querier
Protocol Independent Multicast (PIM-DM, PIM-SM)

Security

- IEEE 802.1x based edge authentication -- supports single and multiple host access, guest access, voice authorization, and Microsoft Active Directory, and multiple authenticators per port.
Switch access password protection
User-definable settings for enabling or disabling Web, SSH, Telnet, SSL management access
Port-based MAC Address alert and lock-down
IP Address filtering for management access via Telnet, HTTP, HTTPS/SSL, SSH and SNMP
RADIUS and TACACS+ remote authentication for switch management access
Up to 100 Access Control Lists (ACLs) supported; up to 127 Access Control Entries (ACEs) per ACL or per port.SSLv3 and SSHv2 encryption for switch management traffic
Management access filtering via Management Access Profiles
Custom Login Banners
Dynamic ARP Inspection
Captive Portal Authentication

Other Switching

- Link Aggregation with support for up to 18 static aggregated links, 8 dynamic aggregated links per switch and up to 8 member ports per aggregated link; LACP support (IEEE 802.3ad), LLDP-MED
Support for unicast NLB (multicast NLB not supported)

Management

- Web-based management interface
Industry-standard CLI accessible via Telnet or Local Serial Port
SNMPv1, SNMP v2c and SNMPv3 supported
4 RMON groups supported (history, statistics, alarms and events)
TFTP transfers of firmware and configuration files
Dual Firmware images on-board
Multiple Configuration file upload/download supported
Statistics for error monitoring and performance optimization including port summary tables
BootP/DHCP IP address management supported
Syslog remote logging capabilities
Temperature sensors for environmental monitoring

Chassis

- 440 x 387 x 43.2 mm (W x D x H)
17.3" x 15.2" x 1.7"
1U, rack-mounting kit included
Approximate weight (without modules): 5.54 kg, 12.2 lbs
Approximate weight (with modules): 5.70 kg, 12.6lbs

Hardware

- 256MB of CPU SDRAM

32MB of Flash Memory

MIB Support

- RFC 1213 MIB II
RFC 1215 Standard Traps
RFC 1286 Bridge MIB
RFC 1442 SMIv2 (SNMPv2 MIB)
RFC 1451 Manager-to-Manager MIB
RFC 1492 TACACS+
RFC 1493 Definitions of Managed Objects for Bridges
RFC 1573 Evolution of Interfaces
RFC 1643 Etherlike MIB
RFC 1757 Remote Network Monitoring (RMON) MIB
RFC 1907 SNMP v2 MIB
RFC 2011 Internet Protocol (IP) MIB using SMIv2
RFC 2012 Transmission Control Protocol (TCP) MIB using SMIv2
RFC 2013 User Datagram Protocol (UDP) MIB using SMIv2
RFC 2233 Interfaces Group using SMIv2

RFC 2618 RADIUS MIB

RFC 2665 Ethernet-like Interface Types MIB

RFC 2666 Identification of Ethernet Chip sets

RFC 2674 MIB for Bridge with Traffic Classes, Multicast Filtering and VLAN Extension
(IEEE802.1p/q MIB)

RFC 2737 ENTITY-MIB

RFC 2819 RMON MIB

RFC 2863 Interface Evolution

Standards Supported

- IEEE 802.1AB
IEEE 802.1D
IEEE 802.1Q
IEEE 802.1p
IEEE 802.1w
IEEE 802.1x
IEEE 802.2
IEEE 802.3
IEEE 802.3I
IEEE 802.3u
IEEE 802.3x
IEEE 802.3z
IEEE 802.ab
IEEE 802.3ac
IEEE 802.3ad
IEEE 802.3ae
IEEE 802.3ak

Peripherals

- Power:
RPS-600 Redundant Power Supply (listed under non-PoE models)
EPS 470 Redundant Power Supply (listed under PoE models)

Dual Port 10Gb Modules (Up to Two Modules per Switch):

CX-4 Module

XFP Module

10GBase-T Option Module (Limit one per switch)

SFP+ Option Module

Stacking Module with 1 Meter Dell Stacking Cable

Transceivers:

1Gb SFP Optical Transceiver, 1000BASE-SX, LC Connector
1Gb SFP Optical Transceiver, 1000BASE-LX, LC Connector
10Gb XFP Optical Transceiver, SR, LC Connector
10Gb XFP Optical Transceiver, LR, LC Connector
10Gb SFP+ Optical Transceiver, SR, LC Connector
10Gb SFP+ Optical Transceiver, LR, LC Connector
10Gb SFP+ Optical Transceiver, LRM, LC Connector (Release early 2009)

Cables:

SFP+ Direct Connect Cables

CX-4 Cables

1 Meter Stacking Cable

3 Meter Stacking Cable

Environmental Operating Conditions

- Operating Temperature: 0° C to 45° C
Storage Temperature: -20° C to 70° C
Operating Relative Humidity: 10% to 90% non-condensing
Storage Relative Humidity: 10% to 95% non-condensi

Power

- 100-240VAC, 50-60Hz

Supporting your unique environment

The right support is not one-size-fits-all, it's what fits your environment. Dell™ ProSupport™ provides flexible and reliable support that empowers you to customize services to meet your unique business needs. Choose support based on how you use technology and where you want to allocate resources.

Whether you need to support an IT staff or end users, Dell™ ProSupport™ will help you remove barriers so you can get back to work. You'll receive:

- 24x7x365 direct access to Dell Expert Centers via email, chat and phone support
- Mission-Critical Response Options, including ability to self-designate severity level 1
- Hardware and software diagnostics and troubleshooting, including direct Dell OEM support and third-party collaborative support

- "How-to" support on popular software applications such as Norton™ AntiVirus, Microsoft® Office, Microsoft® Small Business Server, Intuit® QuickBooks®, Adobe® Photoshop® and Adobe® Acrobat®.
- Skip the script and save time with tech-to-tech support
- Access to tools and resources to certify your technicians that allows them to self-dispatch parts and labor
- Award winning support from Global Command Centers for dispatch monitoring and end-to-end case management for critical situations or natural disasters

Further maximize the availability and stability of your infrastructure through Dell Support Services enhanced support options, such as asset and data protection, Specialized On-site* Services, Remote Advisory Services. Streamline patch management and get detailed reporting with Proactive Maintenance. Get advice by telephone access to technical expertise on applications and solutions such as Microsoft® Exchange, Virtualization and more. And for more complex IT environments, choose the Enterprise-Wide Contract option, which provides a designated Service Delivery Manager, performance benchmarking, proactive planning and custom reporting.

Simplify your IT infrastructure

Dell ProConsult™ Global Infrastructure Consulting Services can help integrate your new enterprise hardware into an existing or evolving IT infrastructure. We can provide guidance whether you're adding single or multiple servers, a storage area network or virtualizing your environment. We can also help you enhance the overall performance of your IT infrastructure and data center by consolidating software and hardware, reviewing data usage to optimize the environment, developing a business continuity plan and by helping you migrate to standards-based technologies.

We utilize skilled solution architects, innovative tools, automated analysis and our own intellectual property to give customers rapid insight into the root causes of unnecessary complexity. We seek better answers than traditional service models, based on our belief that solving problems should not need armies of people. Our strategy is to help customers quickly identify high-impact, short-duration projects that deliver ROI and free up resources to obtain competitive advantage. The result is practical, action-oriented plans with specific, predictable, measurable outcomes. From data center optimization to server virtualization to systems management, our consulting services help you build a more efficient enterprise.

Accelerating deployment

Dell helps simplify implementation with deployment services that speed time to production of new hardware and IT solutions. During the initial system-build of your server, we can customize software and hardware to match your specific requirements. By helping you rapidly deploy new capabilities while minimizing disruptions, we can contribute to improved efficiencies and lower costs.

Empowering your team

Our education services provide training and certification courses to help you and your team better manage and use your new hardware so you can reap the full benefits of standards-based technologies.

Lifetime Limited Warranty*

Select PowerConnect™ products carry a Lifetime Limited Hardware Warranty* with Basic Hardware Service for as long as you own the product. Repair or replacement does not include configuration or other advanced service and support provided by Dell ProSupport Services. The PowerConnect products covered by the Lifetime Limited Hardware warranty* are: the PowerConnect™ 2800 Series, the PowerConnect™ 3500 Series, the PowerConnect™ 5500 Series, the PowerConnect™ 6200 Series and the PowerConnect™ 8000 Series rack switches.

